

Appl. No. 10/699,263
Amdt. Dated 12/21/2004
Response to Office action dated 09/21/2004

REMARKS

Claims 3, 4, 6, 9, 14, and 15 are pending. Claims 1, 2, 5, 7, 8, and 10-13 have been canceled. Claims 14 and 15 have been added. No new matter has been added.

Disclaimers Relating to Claim Interpretation and Prosecution History Estoppel

Claims 3, 4, 6, and 9 have been amended, notwithstanding the belief that these claims were allowable. Except as specifically admitted below, no claim elements have been narrowed. Rather, cosmetic amendments have been made to the claims and to broaden them in view of the cited art. Claims 3, 4, 6, and 9 have been amended solely for the purpose of expediting the patent application process, and the amendments were not necessary for patentability.

Any reference herein to "the invention" is intended to refer to the specific claim or claims being addressed herein. The claims of this Application are intended to stand on their own and are not to be read in light of the prosecution history of any related or unrelated patent or patent application. Furthermore, no arguments in any prosecution history relate to any claim in this Application, except for arguments specifically directed to the claim.

Claim Objections

The Examiner objected to claims 1-13. This objection is respectfully traversed. The Examiner pointed to the following informalities:

- Claim 3 recites, "a single phase motor" (line 3 of claim). The Examiner suggested changing "a" to "the".

The reference to "a single phase motor" in claim 3 has no antecedent basis, so changing "a" to "the" is probably not appropriate. It appears that the Examiner may have confused "single phase motor driving unit" recited in claim 1 with "a single phase motor" recited in claim 3. These are

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different elements, so it appears that amendment of claim 3 as proposed by the Examiner is not necessary.

Withdrawal of the objection is therefore requested.

New Claims

New claim 14 includes limitations comparable to those in claim 3.

New claim 15 includes limitations comparable to those in claim 4.

Claim Rejections - 35 USC § 103

The Examiner rejected claims 3 and 3/9 under 35 USC § 103 as obvious from Guzik in view of Yoshitomi et al. (USP 6,157,151). This rejection is respectfully traversed.

In Fig. 9 of GuZik there is disclosed a process of causing a recirculating current for a single phase motor. However, GuZik does not teach nor suggest how to generate pulses (Timing signal) for causing the recirculating current to flow.

On the other hand, in Fig. 4 of Yoshitomi is illustrated Pulse K. However, the Pulse K is not for causing a recirculating current to flow but for reducing a rotational speed of a motor. Moreover, as clearly indicated in Fig. 7, Yoshitomi discloses a control of a two phase motor but not a control of a single phase motor. Thus, a recirculating current loop is not formed when transistors 6, 7 are off in Fig. 7. Accordingly, the Pulse K in Fig. 4 of Yoshitomi is clearly different from the Timing signal of the present invention in both its object and function. When Pulse K is input in the circuit in Fig. 7 of Yoshitomi, a slight effect of reducing ineffective current may be obtained. However, an effect of reducing noise cannot be achieved at all. This is because, as mentioned above, there is not configured a recirculating current loop in Fig. 7 of Yoshitomi.

Furthermore, as clearly illustrated as timing charts for signals A, B, C and D in Fig. 4 of Yoshitomi, a very complicated circuit must be prepared for generating Pulse K, such as a triangular

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wave signal generating circuit. On the other hand, the present invention can be realized by a simpler circuit configuration because the present invention only needs to compare a reference value with a sine wave signal. In other words, the present invention is directed a constant speed control thus enables to eliminate complicated circuit design.

As discussed above, a manner of generating a Timing signal of the present invention is not disclosed nor suggested in GuZik and Yoshitomi. Thus the applicants have firm belief that the present invention possesses novelty and unobviousness over GuZik and Yoshitomi.

Conclusion

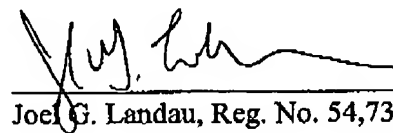
It is submitted, however, that the independent and dependent claims include other significant and substantial recitations which are not disclosed in the cited references. Thus, the claims are also patentable for additional reasons. However, for economy the additional grounds for patentability are not set forth here.

In view of all of the above, it is respectfully submitted that the present application is now in condition for allowance. Reconsideration and reexamination are respectfully requested and allowance at an early date is solicited.

The Examiner is invited to call the undersigned attorney to answer any questions or to discuss steps necessary for placing the application in condition for allowance.

Respectfully submitted,

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